

IN THE CLAIMS

Claims 1-13 have previously been cancelled without prejudice.

Please cancel claims 18-23 without prejudice,

Please amend claims 14-17.

Please enter the pending claims as follows:

1.-13. (Cancelled)

14. (Currently Amended) An apparatus comprising:

a power supply, said power supply being continuous-wave;

a magnetron disposed proximate said power supply, said magnetron capable of generating microwave energy and capable of sweeping frequency of said microwave energy very rapidly to prevent standing waves and to eliminate arcing damage due to build-up of charges;

a waveguide disposed proximate said magnetron, said waveguide coupled to an input aperture, said waveguide capable of transmitting said microwave energy;

a stirrer disposed proximate said waveguide, said stirrer capable of linear and rotational motion, said stirrer formed of a material that reflects

said microwave energy, said stirrer ~~to mix~~ capable of mixing said microwave energy;

a susceptor disposed proximate said stirrer, said susceptor capable of linear motion and rotational motion, said susceptor formed of a material that does not absorb said microwave energy, said susceptor ~~to further mix said microwave energy;~~ and capable of holding a self-aligned mechanical joint and exposing said self-aligned mechanical joint to said microwave energy held by said susceptor; said self-aligned mechanical joint disposed on;

a conveyor belt disposed proximate said susceptor, said conveyor belt capable of holding said susceptor ~~said self-aligned mechanical joint~~ disposed in an inert atmosphere for a dwell time of 15.0-30.0 seconds at a peak temperature of about 221.0-240.0 degrees Centigrade; said self-aligned mechanical joint exposed to said microwave energy, said self-aligned mechanical joint comprising:

a bump disposed on a die, said die capable of absorbing said microwave energy, said microwave energy capable of being transformed into heat by molecular excitation; and

a solder alloy disposed on a substrate, said solder alloy capable of reflow by said heat through conduction from said bump

walls disposed around said conveyor belt, said walls being electrically conductive, said walls having emissivity with a value of 0.8.

15. (Currently Amended) The apparatus of claim 14 wherein said ~~microwave energy has variable frequency~~ is set at 5.8 (+/- 1.12) GHz.

16. (Currently Amended) The apparatus of claim 14 wherein said ~~bump is capable of reflow by~~ microwave energy is capable of reflowing in a significantly shorter time solder alloy disposed on a substrate.

17. (Currently Amended) The apparatus of claim ~~14~~ 16 wherein said ~~microwave energy has variable frequency~~ magnetron has a power output of about 400.0-750.0 Watts.

18.-23. (Cancelled)